



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,569	07/10/2006	Stephen John Gibbon	A1116/20341	4463
3000 7590 02/19/2009 CAESAR, RIVISE, BERNSTEIN, COHEN & POKOTILOW, LTD. 11TH FLOOR, SEVEN PENN CENTER 1635 MARKET STREET PHILADELPHIA, PA 19103-2212			EXAMINER PETTITT, JOHN F	
			ART UNIT 3744	PAPER NUMBER
			NOTIFICATION DATE 02/19/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@crbcp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,569	<b>Applicant(s)</b> GIBBON, STEPHEN JOHN	
	<b>Examiner</b> John F. Pettitt	<b>Art Unit</b> 3744	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4,5,7,11-14,16-19,23-26,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,7,11-14,16-19,23-26,30 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/13/2006</u>  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. **Claims 1, 4-5, 7, 11-14, 16-19, 23-26, and 30-31** are objected to because of the following informalities: The recitation, “and the or” as well as “the or each” and “the or at least” is found in several claims (at least, claim 1, line, 11, claim 4, line 2; others exist as well) is unclear in context and is assumed to read without the “or” as appropriate.

Applicant is required to correct all instances in the claims, and not merely the instances cited here.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 30-31** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As claims 30-31 provide for the use of the apparatus of claim 1, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Further, claims 30-31 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex*

Art Unit: 3744

*parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 101***

**4. 35 U.S.C. 101 reads as follows:**

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**5.** The claimed invention of claims 30-31 lacks patentable utility as the process is not a proper process claim under 35 U.S.C. 101 as no steps are set forth. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 102***

**6.** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**7. Claims 1, 7, 11, 13-14, 19, 23-24, and 30-31** are rejected under 35

U.S.C. 102(b) as being anticipated by Grenier (US 5,412,954) hereafter Grenier.

**In regard to claims 1, 19, 23-24, and 30-31**, Grenier teaches an apparatus and method for cryogenic distillation of air, comprising: an assembled unit (Fig. 3) that comprises: a first distillation column module (15, 20) within which is provided at least one a single cryogenic distillation column (1B); a further distillation column module (15A) within which is provided at least one further cryogenic distillation column (1C),

Art Unit: 3744

said further distillation column module (15A) being mounted on top of said first distillation column module (15, 20); a heat exchange module (19) within which is provided heat exchange means (2) for cooling column feed air to a cryogenic distillation temperature (column 3, lines 15-20); and at least one further processing unit (any or all of 3, 4, 5, 6); wherein each of the distillation column (1B), said heat exchange means (2) and the further processing unit (any or all 3, 4, 5, 6) are operationally interconnected (see Fig. 3) and said assembled unit (Fig. 3) is suitable for transportation to and erection at a site for a cryogenic air separation plant (column 1, lines 45-50); wherein each component (flow device) of the apparatus is attached directly to at least one adjacent component (flow components are all attached); wherein each component of the apparatus is attached in position relative the first distillation column module (15, 20; all components are relatively positioned) by a framework (19, 20, 15, 15A) of support members (inherent parts of 19, 20, 15, 15A that hold in place the flow components); and capable of being used to in the construction of a cryogenic air separation plant (column 2, lines 40-45) and produce at least 3500 metric tons/day of O<sub>2</sub>.

**In regard to claims 7**, Grenier teaches that the first distillation column module (15, 20) comprises a high pressure distillation column (1B), said apparatus further comprising a second distillation column module (15) within which is provided a low pressure cryogenic distillation column (1A).

**In regard to claim 11**, Grenier teaches that the at least one further processing unit (3, 4, 5, 6) is an air purification unit (4 - column 2, lines 45-50).

Art Unit: 3744

**In regard to claim 13**, Grenier teaches that the at least one further processing unit (3, 4, 5, 6) is a compressor (3).

**In regard to claim 14**, Grenier teaches that the at least one processing unit (3, 4, 5, 6) is a chiller tower (6).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. **Claims 4-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grenier in view of Bracque et al. (US 5,349,827) hereafter Bracque (827). Grenier teaches all of the claim limitations of claims 4-5 but does not explicitly teach that the diameter of the column (1B) is about 3.5 (claim 4) or 5 or 6 (claim 5)meters (16-19 feet). However, Grenier teaches that columns are of substantial column diameters. Further, it is routine practice in the art to size the column diameter to meet the flow demands and throughput goals of the system. Finally, Bracque (827) teaches distillation column

Art Unit: 3744

diameters of about 5 meters (column 2, lines 20-25). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ the system of Grenier with columns having diameters of 5 meters as taught by Bracque (827) for the purpose of providing a sufficiently sized column for producing the desired throughput depending on the application at hand.

**10. Claims 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Grenier in view of Zarate et al. (US 4,957,523) hereafter Zarate. Grenier teaches all of the limitations of claim 12 but does not explicitly teach that the air purification unit (4) comprises at least two air purification vessels arranged in parallel, each vessel comprising at least one bed of carbon dioxide and/or water adsorbent material. However, the purification system of Grenier is generically taught as such systems are well known in the art, as is taught, for example, by Zarate. Zarate teaches an air purification unit (150) comprises at least two air purification vessels (160, 170), each vessel (160, 170) comprising at least one bed of carbon dioxide and/or water adsorbent material (column 5, lines 65-67), said vessels (160, 170) being arranged in parallel and configured for use in a temperature or a pressure swing adsorption process (column 6, lines 1-15). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify Grenier with the air purification unit (150) of Zarate for the purpose of providing air purification continuously as well as regenerating one of the vessels (160, 170) during operation so that the purification system can have more production hours (relative to maintenance hours).

**11. Claims 16-18 and 25-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grenier in view of Bracque et al. (US 5,461,871) hereafter Bracque (871). Grenier teaches all of the limitations of claims 16-18 but does not explicitly teach that the at least one further processing unit (3, 4, 5, 6) is provided within at least one further processing unit module. However, providing such a module is a simple extension or replication of what is practiced in Grenier; further Bracque (871) teaches an at least one further processing unit (any or all of 8, 9, 10, 14, 15, 17 at least) within at least one further processing unit module (1, 3) within which is provided pipe work (se lines) for operational interconnection of the further processing unit (any or all of 8, 9, 10, 14, 15, 17 at least) in fluid flow communication with other components (any of the other flow devices) of the apparatus (Fig. 1); in addition, Bracque (871) teaches a framework (collection) of supporting members (corners or connection portions between walls of modules 1, 3) and panels (walls) provided between adjacent support members (corners) forming at least one enclosure ( housings 1, 3) within the framework (collection) within which is provided the or at least one further processing unit (any or all of 8, 9, 10, 14, 15, 17 at least). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the system of Grenier as discussed with the framework of Bracque (871) as discussed for the purpose of improving the simplicity of construction and of reducing the number of parts that need to be custom installed at the site.

**In regard to claim 25-26**, Grenier and Bracque (871) teach all of the limitations but do not explicitly teach transporting the assembled unit and erecting the unit on site nor that construction takes place at a dockside or a construction facility with access to a dockside for transportation by sea. However, it is clear that in order to build the device at a construction facility owned by the producer and then provide the device to a customer overseas one must build the device at a facility that has access to a dockside in order to provide the device over the seas as a matter of logistical and mechanical expedient. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the assembled unit from a construction site with access to the dockside for the purpose of convenient delivery of the unit over a sea.

### ***Conclusion***

**12.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to John F. Pettitt whose telephone number is 571-272-0771. The examiner can normally be reached on M-F 8a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on 571-272-4834 or 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 3744

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John F Pettitt /  
Examiner, Art Unit 3744

/Cheryl J. Tyler/  
Supervisory Patent Examiner, Art  
Unit 3744

JFP III  
February 13, 2009